

Listing Of Claims

1-18 (Cancelled)

19. (New) In a personal portable phone having an ear piece, the antenna improvement comprising:

an antenna base which is substantially perpendicular to the plane of the ear piece when the antenna is in its operative position,

a first directional antenna mounted on said base providing a first conical electromagnetic energy radiation pattern, said first conical pattern having a first included angle of less than 60° and an axis that is substantially perpendicular to the plane of said base and substantially parallel to the plane of the ear piece, said conical pattern encompassing substantially the sole radiation from said antenna,

said first conical pattern substantially missing the head of the user when a user places the ear piece against the user's ear.

20. (New) The improvement of claim 19 wherein: said first directional antenna is a patch type antenna.

21. (New) The improvement of claim 20 wherein: said patch type antenna has an inoperative position flush with the face of said base in an inoperative state.

22. (New) The improvement of claim 19 wherein: said first included angle is approximately 30° .

23. (New) The antenna improvement of claim 19 further comprising:

a second directional antenna adjacent to said first antenna on said antenna base, said second antenna providing a predetermined second conical electromagnetic energy radiation pattern propagating in a direction substantially 180° from the direction in which said first conical electromagnetic radiation pattern propagates from said antenna, said second conical pattern having a second included angle of less than 60° and an axis that is substantially parallel to the plane of the ear piece, said second conical pattern encompassing substantially the sole radiation from said second antenna,

said second conical pattern substantially missing the head of the user when a user places the ear piece against the user's ear.

24. (New) The antenna improvement of claim 23 wherein: said first and second directional antennas are patch type antennas.

25. (New) The antenna improvement of claim 23 wherein: said first and second included angle are each approximately 30° .

26. (New) In a personal portable phone having an ear piece, the method of minimizing the impact of transmitted electromagnetic energy on the head of the user comprising the steps of:

providing a first patch antenna on a plane perpendicular to the plane of the ear piece,

transmitting electromagnetic energy from said first antenna in a first substantially conical pattern having a first included angle of less than 60° and having a first axis, said first axis being substantially perpendicular on said plane of said patch antenna, and

positioning said conical pattern so that said first axis is substantially parallel to the plane of the ear piece when the user places the ear piece against the user's ear and causing said conical pattern to substantially miss the head of the user.

27. (New) The method of claim 26 wherein: said first include angle is approximately 30° .

28. (New) The method of claim 26 further comprising the steps of:

providing a second patch antenna on said plane perpendicular to the plane of the ear piece,

Claim 28 (con't)

transmitting electromagnetic energy from said second antenna in a second substantially conical pattern having a second included angle of less than 60° and having a second axis, said second axis being substantially perpendicular to said plane of said patch antenna, and

positioning said conical pattern so that said first axis is substantially parallel to the plane of the ear piece when the user places the ear piece against the user's ear and causing said conical pattern to substantially miss the head of the user.

29. (New) The method of claim 28 wherein: said first and second included angles are each approximately 30° .